PB85-213940

Superfund Record of Decision (EPA Region 5)
New Brighton Site, Minnesota
(Water Supply System), September 1983

(U.S.) Environmental Protection Agency
Washington, DC

Sep 83

U.S. Department of Commerce
National Technical Information Service
NTIS

United States
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Agency

Office of
Emergency and
Remedial Response

EPA/ROD/R05-83/006
September 1983

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EPA

Superfund Record of Decision:

New Brighton Site, MN (Water Supply System)

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TECHNICAL REPORT DATA
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1. REPORT NO.	2.	3. RECIPIENT'S ACCESSION NO.
EPA/ROD/R05-83/006		PB85 213940 /AS

4. TITLE AND SUBTITLE	5. REPORT DATE
SUPERFUND RECORD OF DECISION New Brighton Site, MN (Water Supply System)	06/24/83 6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S)	8. PERFORMING ORGANIZATION REPORT NO.
9. PERFORMING ORGANIZATION NAME AND ADDRESS Same as box 12.	10. PROGRAM ELEMENT NO. 11. CONTRACT/GRANT NO.
12. SPONSORING AGENCY NAME AND ADDRESS U.S. Environmental Protection Agency 401 M Street, S.W. Washington, D.C. 20460	13. TYPE OF REPORT AND PERIOD COVERED Final ROD Report 14. SPONSORING AGENCY CODE 800/00

15. SUPPLEMENTARY NOTES

16. ABSTRACT

The municipal drinking water wells in the City of New Brighton/Arden Hills were found to be contaminated with volatile organic solvents in June 1981. The City opened two new wells in 1982 to reach a lower non-contaminated water aquifer. Since it was first discovered, the contamination levels have increased in the remaining undeepened municipal wells to approximately 70 ppb trichloroethylene (TCE). The Minnesota Department of Health has ordered several municipal and six private wells closed. The users of the private wells are at present being supplied with bottled water.

The cost-effective Initial Remedial Measure (IRM) is to extend the existing water supply system to the New Brighton and Arden Hills private well users whose wells have been found to be contaminated with TCE and other chlorinated organics. Capital costs for the IRM are estimated to be $217,958.

Key Words: Ambient Water Quality Criteria, Municipal Water System, Potable Water System, Potable Water Supply, DOD, Federal Facilities, Off-Base Contamination, Fire Protection

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Record of Decision New Brighton Site, MN Contaminated media: gw Key contaminants: volatile organic solvents, chlorinated organics (TCE)		

18. DISTRIBUTION STATEMENT	19. SECURITY CLASS (This Report)	21. NO. OF PAGES
	None	14
	20. SECURITY CLASS (This page)	22. PRICE
	None	A7.00

ROD ISSUES ABSTRACT

Site: New Brighton/Arden Hills, Minnesota

Region: V

AA, OSWER
Briefing Date: September 19, 1983

SITE DESCRIPTION

The municipal drinking water wells in the City of New Brighton/Arden Hills were found to be contaminated with volatile organic solvents in June 1981. The City opened two new wells in 1982 to reach a lower non-contaminated water aquifer. Since it was first discovered, the contamination levels have increased in the remaining undeepened municipal wells to approximately 70 ppb trichloroethylene (TCE). The Minnesota Department of Health has ordered several municipal and six private wells closed. The users of the private wells are at present being supplied with bottled water.

SELECTED ALTERNATIVE

The cost-effective Initial Remedial Measure (IRM) is to extend the existing water supply system to the New Brighton and Arden Hills private well users whose wells have been found to be contaminated with TCE and other chlorinated organics. Capital costs for the IRM are estimated to be $217,958.

ISSUES AND RESOLUTIONS

1. The EPA agreed to extend an existing water supply system to users of private wells with TCE concentrations exceeding the Ambient Water Quality Criteria (27 ppb based on increased cancer risk of 10^{-5}). It was originally recommended to provide a connection to a private water supply system. However, affected residents felt that a private system would be unreliable and requested connection with the municipal system. It was decided that the slight increase in cost to use the municipal system was justified because long-term operation and maintenance would be more reliable.

KEY WORDS

- Ambient Water Quality Criteria
- Municipal Water System
- Potable Water Supply

ISSUES AND RESOLUTIONS	KEY WORDS
2. The Twin Cities Army Ammunition Plant is a potential source of contamination. EPA, the State, and the Army have established a task force to coordinate various investigations and share data. The Army believes it is not responsible for the off-base contamination; the source has not in fact been positively identified. Trust Fund monies were used because it was not clearly established that the contamination originated at a Federal facility.	. DOD . Federal Facilities . Off-Base Contamination
3. The water lines were increased by one pipe size (i.e., from 4 to 6 inches) to provide capacity for fire protection. The increased cost was considered an eligible fund expense.	. Fire Protection

SEP 19 1983

Record of Decision
Initial Remedial Measures

SITE: New Brighton/Arden Hills Site
New Brighton, Minnesota

ANALYSIS REVIEWED:

I have reviewed the following documents describing the analysis of cost-effectiveness of remedial alternatives at the New Brighton/ Arden Hills Site:

- Remedial Action Master Plan, New Brighton, CH2M Hill, January 29, 1983.

- Focused Remedial Investigation/Feasibility Study, Private Well Users, New Brighton and Arden Hills, Mn., CH2M Hill, June 27, 1983.

- Office Memorandum, Minnesota Department of Health, July 5, 1983

- Remedial Implementation Alternative Selection, EPA, August, 31 1983

- Public comments and Staff summaries and recommendations.

DESCRIPTION OF SCHEDULED OPTION:

- Extend existing water supply system to the New Brighton and Arden Hills private well users whose wells have been found to be contaminated with trichloroethylene and other chlorinated organics.

DECLARATIONS:

Consistent with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), and the National Contingency Plan (40 CFR Part 300), I have consulted with the State of Minnesota prior to determining the appropriate remedial action. I have determined that water main and service connections for the New Brighton and Arden Hills private well users is a necessary and timely remedial action to protect public health and the environment, and is a feasible and cost-effective remedy. I have also determined that the action being taken is in balance with available resources in the Trust Fund and other program demands.

Lee M. Thomas
Acting Assistant Administrator

Remedial Implementation Alternative Selection
New Brighton/Arden Hills, Minnesota
August 31, 1983

PURPOSE

The purpose of this briefing is to obtain AA approval for the initial remedial measure recommended by the Region and the State for the New Brighton/Arden Hills Site. A "Record of Decision" has been prepared to document the approval.

BACKGROUND

The New Brighton/Arden Hills Site is located immediately north of Minneapolis/ St. Paul, Minnesota. In June 1981 the Minnesota Pollution Control Agency (MPCA) and the Minnesota Department of Health (MDH) found solvent contamination of the ground water used for drinking water in the City of New Brighton and surrounding communities. More than 150 area wells have been sampled by the State of Minnesota, the U.S. EPA Field Investigation Team (FIT), and Army contractors. Fifteen volatile organic priority pollutants were found. Although the major contaminant is trichloroethylene (TCE), each well contaminated by TCE is typically also contaminated with other volatile chemicals. These contaminant concentrations occur at levels high enough to warrant serious concern over the potential adverse impacts upon public health. In fact, MDH has ordered several municipal and six private wells closed. Private wells have TCE levels up to 2700 ppb which is significantly higher than EPA's Ambient Water Quality Criteria of 27ppb (based on increased cancer risk of 10^{-5}). Retests although few in number, have indicated increasing concentrations of some contaminants.

Source(s) for the contamination have not been positively identified. However, the most probable source(s) of the ground water contamination lies within Ramsey County, northeast in the City of New Brighton. The identified plume of contaminated ground water underlies approximately 18 square miles of Ramsey and Hennepin Counties. Several potential sites have been identified that may each be the primary and/or contributing source of the contamination. One potential source of contamination is the Twin Cities Army Ammunnition Plant (TCAAP). The Army has completed the first phase of an investigation of the on-base contamination but, they believe they are not responsible for any off base contamination. The second phase of the Army's study is on-going to further evaluate on-base contamination. A task force has been established between EPA, the State and the Army to share data and coordinate the various investigations being conducted.

RESPONSE ACTIONS TO DATE

Contamination was found in New Brighton's municipal drinking water wells in June 1981. The City of New Brighton has deepened two city wells in 1982 to a lower noncontaminated water aquifer. Since discovery the contamination levels have increased in the remaining undeepened municipal wells to approximately 70 ppb of TCE. The City of New Brighton is presently drilling two additional deeper wells. Although this program is progressing as fast as possible, these new wells will not be available until late this year.

CERCLA activities at the site are proceeding in two steps. The first step addresses the short term problem posed by the contaminated water supplies. EPA has conducted three limited feasibility studies for the areas with contaminated water supplies. The first feasibility study for the summertime water supply for the City of New Brighton municipal wells was completed and a Record of Decision was approved on June24, 1983. The chosen Initial Remedial Measure (IRM) has been implemented by EPA. This action consisted of installation of granular activated carbon filters on two undeepened wells to treat water during the peak summer demand.

The second feasibility study for temporary water supply for St. Anthony, Mn. was completed on June 27, 1983. At present, St. Anthony does not have excessive levels of contamination, but low levels to trace levels of contaminants have been found. The feasibility study for St. Anthony will be finalized only if contaminants continue to increase; therefore, no IRM is being recommended now. The third feasibility study for temporary water supply for the private well users in New Brighton and Arden Hills was completed in draft form for public comment on June 27, 1983. The accompanying Record of Decision addressed the recommendation of that study.

The second step of CERCLA activity at the site consists of an on-going area wide remedial investigation to evaluate the extent and source(s) of ground water contamination. At this point, EPA does not know the source(s) of contamination. The State is managing this project under a cooperative agreement with EPA. The project is expected to be completed in December 1984 and will be followed by a feasibility study.

CURRENT STATUS OF PRIVATE WELL AREA

Six private New Brighton/Arden Hills wells are contaminated with excessive levels of volatile organic chemicals. The users of these wells are at present being supplied with bottled water by the Department of Defense,(DOD)(see attachment A). DOD has not accepted responsibility for ground water contamination outside

of the TCAAP. The Army intends to stop supplying bottled water to the private wells following construction of the IRM. TCAAP was sent a notice letter but did not respond (see Enforcement Status).

The users of these wells have been advised by the Minnesota Department of Health not to use their water for cooking or drinking, and some users have been told not to use their water for any purpose.

ALTERNATIVE EVALUATION

Eleven alternatives were considered to replace the contaminated well water. These alternatives were evaluated by a set of weighed criteria: health, reliability, feasibility, implementability, permanence (meaning active governmental participation during the life of the project), time required to implement, operation and maintanence. This evaluation is presented in numerical terms (see attachment B) and demonstrates that only two of the alternatives were worth further consideration: a new pipeline connection to an existing supply and a deep well to the uncontaminated Mt. Simon/Hinckley aquifer with a new distribution system. Continuation of bottled water supplies were eliminated from further consideration since long-term costs were significantly higher than other alternatives and the long-term use of bottled water was not considered an acceptable remedy. The costs associated with each of these alternatives is summarized below:

Alternatives	Estimated Capital Cost
Pipeline from existing supply*	$ 217,958
Deeper wells	$ 440,400

*Fire protection was included in this cost estimate.

On June 28, 1983 at a public meeting in St. Anthony, Minnesota the findings and recommendations of the CH2M Hill report were presented. MPCA, MDH, and U.S. EPA Region V were at the meeting. The residents in attendance raised objections to connecting the pipeline to the Arden Manor trailer park water supply and prefered connection to the Arden Hills municipal system. The residents felt that since this is a private water supply system there would be very little if any control over the quality of the water. It was decided to use the public water system because the long-term operation and maintenance would be more reliable. Following the public meeting on June 28, 1983, the feasibility study was made available to the public for a public comment period of two weeks. Prior to release of the feasibility study a copy was sent to U.S. EPA Headquarters, Regional Counsel, and the Regional Office of Drinking Water Quality for review and comments. Written

communications from the area residents include a request to connect to Arden Hills water supply rather than to the Arden Manor trailer park system plus they also ask if fire protection could be included. There was also one letter from Briggs and Morgan, attorneys that represent the residents involved in a class action law suit against Honeywell and the U.S. Army asking that the water pipeline also be extended to residences along Round Lake, south of Highway 96. However, the MPCA feels that these homes do not have excessive levels of contaminants at present to warrant this action. Based on review of all available data, findings, recommendations of current and past technical studies, the Region and State recommends the approval of a pipeline connection as stated in the feasibility study, with the exception that the connection be to the City of Arden Hills or New Brighton depending on proximity, in lieu of the the Arden Manor trailer park water supply system.

ENFORCEMENT STATUS

Presently there is no enforcement action on-going with this site. The potential responsible parties were notified in August 1983 of the IRM that is being recommended and were given seven (7) days to inform U.S. EPA if they wish to perform the IRM. No responses were received accepting responsibility for implementation of the IRM. OWPE has determined that the potential responsible parties will not voluntarily conduct the IRM and that CERCLA funds can be used.

RECOMMENDED ALTERNATIVE

Section 300.68 of the National Oil and Hazardous Substances Contingency Plan (NCP) states that the appropriate extent of remedy shall be determined by the lead agency's selection of the remedial action which the agency determines is cost-effective (i.e., the lowest cost alternative that is technologically feasible and reliable) and which effectively mitigates and minimizes damage to and provides adequate protection of public health, welfare, or the environment. Based on our evaluation of the cost-effectiveness of each of the proposed alternatives, the comments received from the public, the Regional Office of Water Quality, and information from the State (MDH and MPCA), we have determined that the IRM to provide an alternative water supply by installation of a pipeline meets the NCP criteria.

The IRM selected is a pipeline connection from the City of Arden Hills or the city of New Brighton depending on the closeness of the pipelines to the affected residences. The Regional Office of Drinking Water, the Minnesota Pollution Control Agency, the Minnesota Department of Health and the Cities of New Brighton and Arden Hills concur in this decision. The State has agreed to provide its 10 percent cost-share through an amendment to the existing site cooperative agreement.

The Record of Decision certifies that:

- The selected Initial Remedial Measure is a cost-effective remedy for the site.
- The selected Initial Remedial Measure will effectively protect the public health and the environment.
- Monies are available in the Trust Fund to finance the remedy.

Attachments C-D provide additional information to support the documentation for this decision.

REQUIRED ACTION

The following actions are required to move the IRM into construction:

- Approve proposed remedy, and cooperative agreement amendment	AA OSWER	Sept 19, 1983
- Enforcement release	U.S. EPA OWPE/OEC	Sept 19, 1983
- Amend cooperative agreement	GAD	Sept 30, 1983
- Design IRM	MPCA	Nov-Dec 1983
- Construct IRM	MPCA	Dec-Feb 1984

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON, DC 20310

18 May 1983

ATTACHMENT A

Mr. William N. Hedeman, Jr.
Director
Office of Emergency and
Remedial Response (WH-548)
U.S. Environmental Protection Agency
Washington, D.C. 20460

Dear Mr. Hedeman:

As you know, the State of Minnesota advised six well owners in New Brighton - Arden Hills, Minnesota, across from the southwest boundary of Twin Cities Army Ammunition Plant, not to drink or, in some cases, bathe in their well water. As an interim measure after consultation with Mr. Wyer and Mr. Cohen of your office, the Army on May 9, 1983, began providing water for the six well owners. This interim response will allow time for EPA to conduct the initial remedial action study and make funds available for providing potable water to the affected families on a more permanent basis. This letter confirms our understanding that, upon completion of your study on the most effective method of providing an alternate water supply, EPA will promptly begin providing water. Further, we understand the study is expected to last about two months.

We continue to support EPA's recent decision to approve the area-wide study and encourage expeditious handling and processing of the study and the interim remedial action. The Army remains ready to work closely with EPA and the State of Minnesota in resolution of this problem.

Sincerely,

Lewis D. Walker

Lewis D. Walker
Deputy for Environment, Safety
and Occupational Health
OASA (IL&FM)

Attachment A

ATTACHMENT B

Table 4-3
RANKING OF ALTERNATIVES

Points Remaining After Subtraction of Demerits

Alternative	Criterion: Health Weighting Factor: 5	Reliability 5	Personal Feasibility 5	Implementability 4	Permanence 4	Time Required 3	O&M 2	Total
1. Bottles - All Use	25	22	15	22	15	25	22	577
2. Truck Delivery Storage - All Use	21	22	25	19	11	18	19	552
3. Bottles - Potable Use Truck Delivery Storage - Nonpotable Use	23	20	16	19	1	18	19	467
4. In-House Treatment - All Use	22	21	22	18	21	15	15	556
5. Bottles - Potable Use In-House Treatment - Nonpotable Use	23	20	13	18	11	15	13	467
6. Neighborhood Treatment - All Use	23	23	25	15	15	15	15	550
7. Bottles - Potable Use Neighborhood Treatment - Nonpotable Use	24	22	16	15	5	15	13	461
8. Pipeline From Existing Supply	25	25	25	20	25	20	25	665
9. Deep Well	25	24	25	15	23	15	24	615
10. Existing 1-Inch Line From Existing Supply Storage - All Use	22	24	25	16	21	15	21	590
11. Bottles-Potable Use Existing 1-Inch Line From Existing Supply Storage - Nonpotable Use	24	22	16	16	11	15	21	505

Attachment B

STATE OF MINNESOTA

EPARTMENT HEALTH

Office Memorandum

ATTACHMENT C

TO: Steven Lee
Solid & Hazardous Waste Division
Minn. Pollution Control Agency

DATE: July 5, 1983

FROM: Richard D. Clark, P.E., Supervisor RDC
Engineering Unit
Section of Water Supply & General Engineering

PHONE: 623-5227

SUBJECT: Feasibility Study, Temporary Water Supply, Private Well Users
New Brighton and Arden Hills

The following is a Minnesota Department of Health comment concerning the above-mentioned study.

The Minnesota Department of Health's water supply construction standards require that all municipal water mains be at least 6-inch diameter pipe. In addition, the Department recommends that fire hydrants not be placed at the end of a 6-inch deadend water main, unless hydraulic analysis can show that the pressure in the water main will not be less than 20 psi at the maximum fire flow demand rate. These requirements would apply to the option of extending an Arden Hills municipal water main along Highway 10 to serve the Group 2 homes and Stewart Lumber.

If you have any questions, please contace me at 623-5227.

RDC:mrs

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MINN. POLLUTION
CONTROL AGENCY

Attachment D